



Keeping Track Study

Paul F. Tremblay, PhD
Roseanne Pulford, BA

A Campus Diary Study of Drinking Patterns, Depressive Symptoms, and Interpersonal Conflicts



Paul Tremblay



Roseanne Pulford

Thanking Our Research Participants

April 2009 marks the end of our monthly online questionnaires. This study would not have been possible without the continued effort and diligence of the students who participated in the 26 weeks and the 24 months of online questionnaires. It is with deep gratitude that we express our appreciation to our participants. We applaud their commitment, dedication and effort in completing the questionnaires on a regular basis and in a timely manner. We recognize that some students continued to participate in our study even when they experienced difficult or inconvenient circumstances. For instance, some participants found themselves camping in remote areas, backpacking through Europe, overseas on student exchanges, tree planting in Canada's far north, or attending military reserves training camps, to name just a few. Through creativity and determination these students made sure that their questionnaires were submitted by using any method available to them – for example, iPhones, borrowed laptops, Internet Cafés or paper copies. We thank you again for your participation!

Mountains and Mountains of Information: Our Work Has Just Begun!

Although the data collection is now complete, we have merely scratched the surface of the extensive collection of findings. As you can imagine, there are many questions that we will address in this study such as how alcohol consumption changes over time, the extent to which depressive symptoms change during exam periods, and the influence of heavy alcohol consumption on depressive symptoms. These are only a few questions. The extensive data collection also provides information that will allow us to investigate the influence of social support, exercise, interpersonal conflict, and academic satisfaction and success on depression. In this newsletter, we present some of our findings to date. On the back cover, we describe how you can stay in touch with us to find out more about our findings as they become available. We are confident that the Keeping Track study will make important contributions in advancing our knowledge of alcohol consumption patterns, depressive symptoms and interpersonal conflicts. Perhaps more importantly, it will also provide directions for developing strategies to help students thrive during their early adulthood.

Thank You to Our Web Team

We thank Peter Fewster and Heather Stevens from Social Science Network & Data Services at Western who did an incredible job developing the study website and email program and overseeing the online data collections since the beginning of the study. We appreciated their conscientiousness and their initiative in anticipating and preventing any problems related to the online data collection. We highly recommend their work!

This research was funded by the Canadian Institutes of Health Research



Centre for Addiction and Mental Health
Centre de toxicomanie et de santé mentale



Investigators

Paul F. Tremblay, Ph.D.
Kathryn Graham, Ph.D.
Roma Harris, Ph.D.
Samantha Wells, Ph.D.
David J. A. Dozois, Ph.D., C. Psych.
Robert C. Gardner, Ph.D.

Number of Participants

- In September 2006, 4884 first year students on Main Campus at Western were sent an invitation email.
- 848 students completed the Baseline Questionnaire (Phase 1), and all these participants were invited to participate in Phase 2.
- 415 students participated in Phase 2, which consisted of 26 weekly questionnaires from October 2006 to April 2007.
- 358 students participated in Phase 3, which consisted of the 24 monthly questionnaires from May 2007 to April 2009.

A Student's Idea Worth Pursuing

Early in the study, a student wrote to us wondering why we asked only about negative emotions and not positive emotions: *"I understand the study is focusing on depressive emotions, but I don't understand why really strong positive emotions in one area wouldn't outweigh other negative emotions."* This made us realize that we should add a "positive" component to our future research. A fairly recent area of psychology referred to as *Positive Psychology* focuses on cultivating people's strengths and virtues. We have just submitted a research proposal to a research grant agency to investigate young adults interests in using various self-help strategies to promote positive emotions and well being. For further information on positive psychology, see the book list on p. 5.

Some Alcohol Consumption Pattern Highlights

- Participants in the Phase 1 baseline assessment consumed a mean number 10.18 (SD = 15.41) drinks, with 40.9% of respondents reporting no drinking during that week.
- The mean number of drinks per week averaged across the 26 weeks of Phase 2 was 7.32 (SD = 7.63) drinks for males and 3.95 (SD = 4.47) drinks for females. The standard deviations (SDs) are very large and therefore reveal that students differ a lot in the amount of alcohol they consume.



- 13.3% of participants consumed no alcohol during the 26 weeks of Phase 2 (October 2006 to April 2007), with a higher rate of abstaining by females (14.7%) than by males (10.8%).
- Figure 1 shows that higher consumption was reported on the weekends with a gradual increase to a peak on Saturdays. A similar pattern has been found in US college studies.
- In Figure 2, we split the samples of males and females who consumed alcohol at any point during the 26 weeks of Phase 2 in three equal groups each based on their amount of alcohol consumption. This figure shows that the heaviest drinking males and females consumed an average of 6.3 drinks and 3.8 drinks respectively on Saturdays.

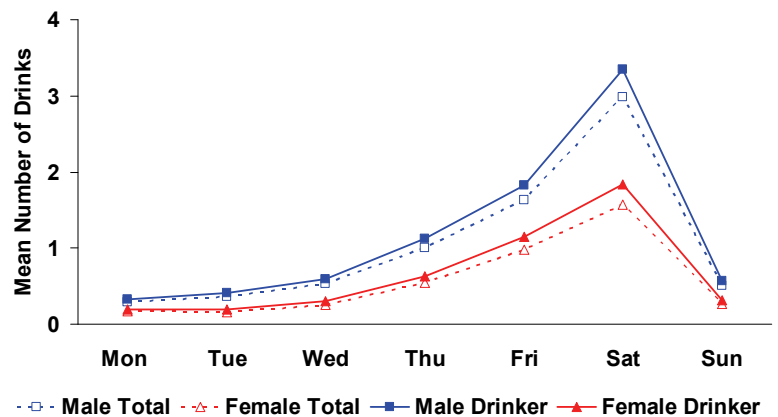


Figure 1. Mean number of drinks on each day of the week during Phase 2 (Oct 2006 to Apr 2007). Results are presented for the total samples of males and females (Male Total, Female Total) as well as for male and female drinkers only (Male Drinker, Female Drinker). Drinkers were defined as participants who consumed at least one drink during the Phase 2 period.

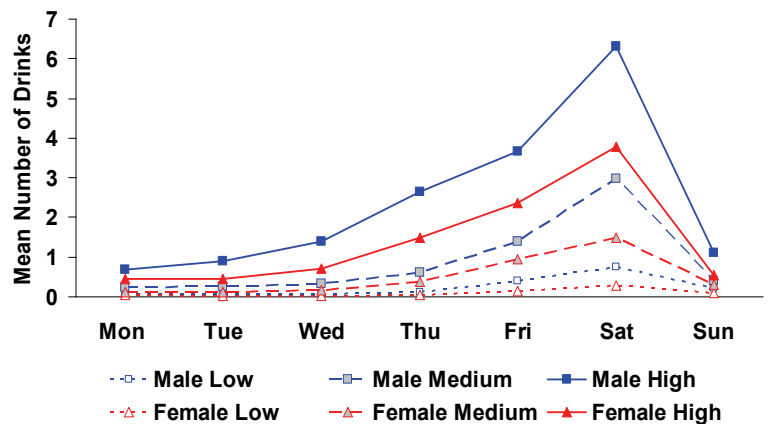


Figure 2. Mean number of drinks on each day of the week during Phase 2 (Oct 2006 to Apr 2007) for three groups of drinkers: Highest, Medium, and Lowest. Male and female drinker samples were each equally divided into three groups consisting of highest, medium, and lowest based on their average consumption across Phase 2.

- Figure 3, below, shows the drinking trajectories from the Baseline assessment in September (2006), the 26 weeks of Phase 2, to the first 11 months of Phase 3 for students who participated in all three phases. The data points are average number of drinks each week (beginning on the Monday and ending on the Sunday at midnight). As shown in the figure, students consumed the highest number of drinks at the beginning of each semester in September and January and the least number of drinks during the exam period in early to mid December. The decreases at the end of the second terms were not as pronounced as in the first semesters, perhaps because these decreases were offset by other factors such as end-of-year parties.
- The highest drinking days in the first academic year (Phase 2) included Halloween, New Year's Eve, and St. Patrick's Day.
- Although not shown in Figure 3, separate male and female drinking trajectories revealed similar patterns of peaks and low points.
- Overall, these findings reveal that alcohol consumption varies considerably as a function of time of the year. Students tend to drink more during periods of low academic demands and holidays. Time of the academic year also had an impact on the number of students who consumed alcohol. Although most students (86.7%) in the sample consumed alcohol during the academic year (Phase 2), as many as 61.9% or as few as 23.2% consumed alcohol on any given week.

Implication

If students are able to control their alcohol consumption during the exam periods, it may be possible to tap into this ability to encourage students to reduce the amount they consume during other periods.

What is Heavy Episodic Drinking?

Heavy episodic drinking is defined as consuming five or more drinks (5+) in a day for men and four or more (4+) drinks for women¹. Researchers in the US, tend to use the term *binge drinking* instead of heavy episodic drinking.

In our study, we found that heavy episodic drinking varied substantially by time of year. For example, in Phase 2, the highest rate of heavy episodic drinking occurred in the week ending December 31. During that week, 51.1% of males and 42.9% of females consumed 5+ or 4+ drinks respectively on at least one day. In contrast, the lowest heavy drinking period occurred during one of the weeks of the midterm exams (i.e., week ending December 10) when only 15.3% of males and 13.4% of females consumed 5+ or 4+ drinks in a day respectively on at least one day of that week.

One of the other periods with the highest rate of heavy episodic drinking was the week ending Oct 29 which included the weekend prior to Halloween. Although overall consumption in the first year was highest at the beginning of September, heavy episodic drinking during that period was not as high as it was during some of the other weeks. We suspect that in the first weeks of September, many students drink on several days of the week without necessarily consuming high amounts on those days.

Researchers have paid particular attention to heavy episodic drinking because that pattern of drinking is associated with higher risk of harms to the drinker or to people around heavy drinkers¹. Some negative consequences reported by students as a result of drinking are described on p. 4.

¹Wechsler H. & Nelson T. F. (2001). Binge drinking and the American college student: What's five drinks. *Psychology of Addictive Behavior*, 15, 287-291.

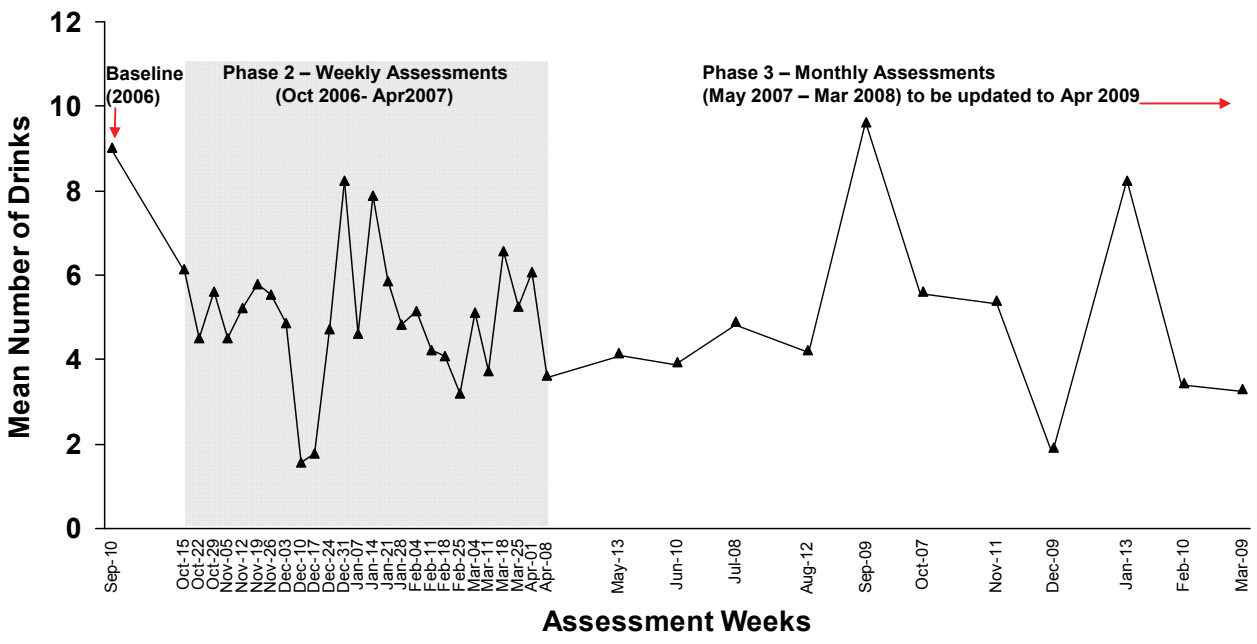


Figure 3. Mean number of drinks per week at Baseline (Sep 2006), in Phase 2 (Oct 2006 to Apr 2007), and in the first part of Phase 3 (May 2007 to Mar 2008). Each date label refers to the end of an assessment week. In Phase 2, assessments of drinks in previous week were conducted during 26 consecutive weeks. In Phase 3, assessments of drinks in previous week were conducted once per month. Abstainers are included in this sample.

Consequences of Alcohol Consumption

In all three phases of the Keeping Track study, we asked participants if they had experienced any negative consequences as a result of their drinking. Below we present the results from the Baseline Phase 1 assessment in September 2006. We asked participants who had consumed alcohol in the preceding 12 months the number of times they had experienced specific negative consequences as a result of their drinking (16.3% of participants did not consume alcohol during that period and were therefore excluded from these results). We note that at that time of assessment, participants were just starting university and were reporting on the 12 months prior to that period.

Among some of the noteworthy findings in the table are that:

- The top four reported consequences were *Hangovers*, *Did something later regretted*, *Forgot where you were/what you did*, and *Engage in unplanned sexual activity*.
- Although, not occurring as often, rates of students engaging in very risky behaviour such as getting hurt or injured, riding in a vehicle with an impaired driver, and driving under the influence of alcohol are also of concern.
- Men are much more likely than women to get into physical fights, damage property, or get in trouble with the police as a result of their drinking.



| Drinking Consequences | F (%) | M (%) | Total (%) |
|--|-------|-------|-----------|
| 1. Hangover | | | |
| None | 29.7 | 31.7 | 30.4 |
| 1- 3 times | 43.7 | 39.4 | 42.0 |
| 4 or more times | 26.7 | 29.0 | 27.5 |
| 2. Miss a class | | | |
| None | 81.4 | 84.2 | 82.4 |
| 1- 3 times | 16.1 | 14.0 | 15.2 |
| 4 or more times | 2.5 | 1.9 | 2.3 |
| 3. Get behind in school work | | | |
| None | 75.8 | 79.5 | 77.2 |
| 1- 3 times | 19.4 | 15.6 | 17.9 |
| 4 or more times | 4.8 | 5.0 | 4.9 |
| 4. Did something later regretted | | | |
| None | 44.3 | 49.8 | 46.4 |
| 1- 3 times | 44.2 | 35.6 | 40.9 |
| 4 or more times | 11.5 | 14.7 | 12.7 |
| 5. Forgot where you were/ what you did | | | |
| None | 48.4 | 49.2 | 48.7 |
| 1- 3 times | 37.1 | 34.7 | 36.2 |
| 4 or more times | 14.5 | 16.2 | 15.1 |
| 6. Argue with friends | | | |
| None | 65.6 | 70.3 | 67.3 |
| 1- 3 times | 30.5 | 21.6 | 27.1 |
| 4 or more times | 3.9 | 8.2 | 5.5 |
| 7. Get into a physical fight after drinking | | | |
| None | 93.1 | 84.5 | 89.9 |
| 1- 3 times | 6.2 | 13.2 | 8.9 |
| 4 or more times | 0.7 | 2.3 | 1.3 |
| 8. Engage in unplanned sexual activity | | | |
| None | 62.9 | 65.4 | 63.8 |
| 1- 3 times | 33.2 | 24.9 | 30.1 |
| 4 or more times | 3.9 | 9.7 | 6.1 |
| 9. Have unprotected sex | | | |
| None | 87.0 | 89.5 | 88.0 |
| 1- 3 times | 10.2 | 8.9 | 9.7 |
| 4 or more times | 2.8 | 1.6 | 2.3 |
| 10. Put yourself at risk from others | | | |
| None | 73.7 | 75.3 | 74.3 |
| 1- 3 times | 24.5 | 19.3 | 22.5 |
| 4 or more times | 1.8 | 5.4 | 3.2 |

| Drinking Consequences | F (%) | M (%) | Total (%) |
|--|-------|-------|-----------|
| 11. Damage property | | | |
| None | 87.3 | 67.8 | 80.0 |
| 1- 3 times | 12.2 | 23.7 | 16.5 |
| 4 or more times | 0.5 | 8.5 | 3.5 |
| 12. Get in trouble with police | | | |
| None | 91.9 | 84.3 | 89.1 |
| 1- 3 times | 7.7 | 14.9 | 10.3 |
| 4 or more times | 0.5 | 0.8 | 0.6 |
| 13. Get hurt or injured | | | |
| None | 67.5 | 70.2 | 68.5 |
| 1- 3 times | 27.6 | 24.8 | 26.6 |
| 4 or more times | 4.9 | 5.1 | 5.0 |
| 14. Ride in a vehicle with an impaired driver | | | |
| None | 78.3 | 72.3 | 76.0 |
| 1- 3 times | 16.8 | 20.0 | 17.9 |
| 4 or more times | 4.9 | 7.8 | 6.0 |
| 15. Drive in a vehicle under the influence of alcohol | | | |
| None | 89.8 | 81.3 | 86.6 |
| 1- 3 times | 8.3 | 11.3 | 9.5 |
| 4 or more times | 1.9 | 7.4 | 3.9 |
| 16. Require medical treatment of an alcohol overdose | | | |
| None | 98.8 | 98.1 | 98.6 |
| 1- 3 times | 1.2 | 1.9 | 1.4 |
| 4 or more times | 0 | 0 | 0.0 |
| 17. Have problems with money | | | |
| None | 91.0 | 92.3 | 91.5 |
| 1- 3 times | 7.9 | 4.2 | 6.5 |
| 4 or more times | 1.2 | 3.5 | 2.0 |
| 18. Have problems with health | | | |
| None | 90.3 | 94.2 | 91.8 |
| 1- 3 times | 8.8 | 5.0 | 7.4 |
| 4 or more times | 0.9 | 0.8 | 0.9 |
| 19. Have problems with friends | | | |
| None | 84.7 | 89.2 | 86.4 |
| 1- 3 times | 13.8 | 8.1 | 11.7 |
| 4 or more times | 1.4 | 2.7 | 1.9 |
| 20. Have problems with family | | | |
| None | 85.1 | 88.8 | 86.5 |
| 1- 3 times | 13.5 | 8.9 | 11.8 |
| 4 or more times | 1.4 | 2.3 | 1.7 |

Depressive Symptoms

Participants completed the Beck Depression Inventory-II (BDI-II) during each assessment of Phase 2 and Phase 3. In Phase 2, the overall BDI-II score averaged across the 26 weeks was 5.38 ($SD = 5.82$). (We will present Phase 3 results in the next newsletter.) Figure 4 illustrates the mean depression scores of the females, males, and total sample across the 26 weeks of Phase 2. During this period, the most significant depression score decrease occurred in the initial first five weeks (from $M = 9.44$ to $M = 5.76$). The change in mean depression scores after this period was less substantial and fluctuated with the lowest mean score of 3.39 in Week 13, ending Jan 07, 2006. As can also be seen in Figure 4, the shape of the male and female trajectories are very similar, with the exception that females scored approximately 2 points higher than did males at each time point. Overall the mean depression scores are relatively low, but it



is probably more meaningful to calculate the number of students who have elevated depression scores. BDI-II scores can range from 0 to 63. Scores in the range of 0-13 are described as minimal, 14-19 as mild, 20-28 as moderate, and 29-63 as severe. In Figure 5 we show the percentages of participants who scored in the mild, moderate or severe range during each week of Phase 2.

Overall, it appears that students may exhibit slightly higher depressive symptoms, at the beginning of the first academic year. Perhaps, many first year students experience depressive symptoms as a result of the transition to university. We will investigate other potential reasons for the initial decrease in the first five weeks. We suspect that our standard of care procedure (i.e., contacting students with elevated scores) may have also had an influence. For example some students expressed their appreciation that the research co-ordinator (R. Pulford) showed some concern about their situation. Also, repeated administrations could lead participants to monitor their symptoms more closely and try to reduce these. In the majority of contacts with R. Pulford, participants generally expressed problems related to exam stress, receiving poor grades, or relationship problems.

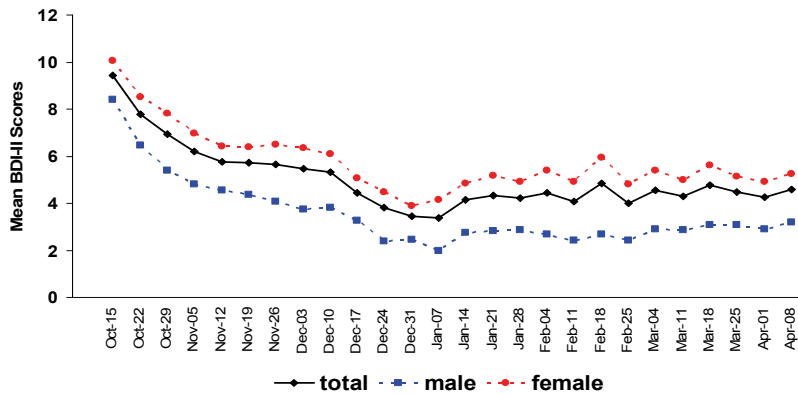


Figure 4. Mean BDI-II scores in Phase 2

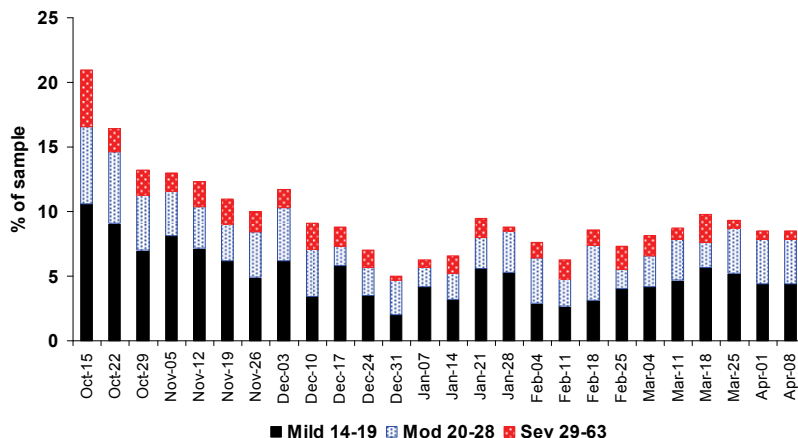


Figure 5. Percentage of participants who had mild, moderate, or severe symptoms of depression in Phase 2

Self-Help Websites and Books

Please note that these resources are not a substitute for professional medical or mental health advice. If you have problems with alcohol or are feeling depressed, we encourage you to consult a doctor or a psychologist.

Alcohol

- www.camh.net (Information on alcohol and links to various other sites)
- www.alcoholhelpcenter.net (For concerns about drinking; assessment of your drinking; and information and tools to reduce drinking)
- www.checkyourdrinking.net (Assessment of your drinking pattern)
- www.lrdg.net (Facts and guidelines on alcohol consumption)

Depression and Anxiety

- www.camh.net (Extensive information on depression and treatment including a 28-page guide)
- www.depressioncenter.net (A free online cognitive behavioural therapy program with several exercises, online group support, and information about depression. The site states that "you are encouraged to first check with your doctor before beginning this program, especially if you have any health conditions or concerns.")
- www.paniccenter.net (This site provides a number of interactive tools to deal with anxiety and panic. The site states that "you are encouraged to first check with your doctor before beginning this program, especially if you have any health conditions or concerns.")

Self-Help Books on Depression

You can view a description of all these books at www.amazon.ca.

- Burns, D.D. (1999). *Feeling good: The new mood therapy (revised and updated)*. New York: Avon Books.
- Greenberger, D., & Padesky, C.A. (1995). *Mind over mood: A cognitive therapy treatment manual for clients*. New York: Guilford Press.
- Patterson, R. J. (2002). *Your depression map*. Oakland CA: New Harbinger Publications.
- Seligman, M.E.P. (1991). *Learned optimism: How to change your mind and your life*. New York: Knopf.
- Williams, M., Teasdale, J., Segal, Z., & Kabat-Zinn, J. (2007). *The mindful way through depression*. New York: Guilford.

Self-Help Books on Promoting Happiness and Well-Being

- Fredrickson, B. L. (2009). *Positivity*. New York: Crown Publishers.
- Lyubomirsky, S. (2008). *The how of happiness: A scientific approach to getting the life you want*. New York: Penguin Press.
- Seligman, M. E. P. (2002). *Authentic happiness*. New York: Free Press.

Interpersonal Conflicts

In some of our previous research, we have investigated experiences of aggression and other types of related conflicts in university student populations^{1,2}. For example, in a study of alcohol-related aggression among university students at six universities across Canada, we found that 12.7% of the total sample (16.4% men and 10.6% women) reported that they had been involved in a physically aggressive incident at a bar, nightclub or pub in the last 12 months. Results in other locations included 10.5% in a home or residence, 4.8% at parties, and 4.4% in other locations¹.

In the Keeping Track Study, our focus was on a broad range of interpersonal conflict situations, and we collected information on the actions of the two main individuals involved in the conflict. In the table on this page, we present the results of the conflicts that were reported in the Baseline questionnaire (Sep 2006). Participants were asked to report a conflict that had occurred since the beginning of September. Only the actions of the opponent are presented here. Based on the open-ended descriptions of conflicts described by students we produced a classification to summarize all the actions reported. As can be seen in the table, a large proportion of the conflicts involve mild to moderate verbal communication and rude and inconsiderate behaviour. Sometimes these "low intensity" deviant behaviours are referred to as *incivility* and tend to occur more frequently than severe aggressive acts.

Although not presented here, we also assessed the level of harm from these experiences. This information will enable us to investigate how interpersonal conflicts influence depressive symptoms, as well as academic motivation, satisfaction and success.

¹Tremblay, P. F., Graham, K., & Jelley, J. (May 2005). Experiences of physical aggression among university students. Organized poster symposia presented at the 13th Annual Meeting of the Society for Prevention Research, Washington DC.

²Tremblay, P. F., Harris, R., Berman, H., MacQuarrie, B., Hutchinson, G., Smith, M.-A., Braley, S., Jelley, J., & Dearlove, K. (2008). Negative social experiences of university and college students. *Canadian Journal of Higher Education*, 38, 57-75.



| Opponent's Action | Women | | Men | |
|--|-------|------|-----|------|
| | n | % | n | % |
| Non Provocative Behaviors | | | | |
| 1. Communication (e.g., apologizes, agrees, calm, shows no overt reaction, tries to work it out) or Passive (e.g., avoid, leaves, ignores) | 9 | 2.3 | 7 | 3.2 |
| Verbal Behaviors and Body Language | | | | |
| 2. Mild to moderate verbal (e.g., expressing a grievance, mild or moderate argument, body language, yelling, insulting, humiliating, teasing) | 195 | 50.0 | 104 | 48.1 |
| 3. Severe verbal (e.g., swearing, threatening, very harsh words, verbal intimidation, abuse) | 13 | 3.3 | 11 | 5.1 |
| 4. Other verbal (e.g., vague description, lying) | 3 | 0.8 | 4 | 1.9 |
| Physical | | | | |
| 5. Mild physical (e.g., light bump, light push, pinch, grab, mild restraint, pushing while in sports, brush up against someone) | 11 | 2.8 | 11 | 5.1 |
| 6. Severe physical (e.g., physical assault, kicking, forceful pushing, punch, forceful restraint, slap, hit, bite, forceful shove, body check) | 5 | 1.3 | 14 | 6.5 |
| 7. Horseplay (including rough play in sports) | 0 | 0.0 | 2 | 0.9 |
| 8. Other physical (e.g., throwing objects, breaking things) | 0 | 0.0 | 2 | 0.9 |
| Sexual | | | | |
| 9. Sexual advances with no contact (including inappropriate sexual remarks, offensive jokes or dialogue, displays of sexual material, flirting) | 10 | 2.6 | 2 | 0.9 |
| 10. Sexual incidents (demanding sexual favours, inappropriate touching, sexual assault, rape, verbal threats of a sexual nature) | 5 | 1.3 | 0 | 0.0 |
| Indirect or Other Types | | | | |
| 11. Theft (e.g., having something stolen, break-in, withholding money/necessary resources) | 2 | 0.5 | 3 | 1.4 |
| 12. Phone/computer (e.g., online harassment, email spam, telemarketing, prank phone calls etc.) | 1 | 0.3 | 1 | 0.5 |
| 13. Graffiti/vandalism (including damage to property) | 3 | 0.8 | 1 | 0.5 |
| 14. Gossip/jokes (e.g., rumours, negative things said behind back, offensive jokes) | 20 | 5.1 | 5 | 2.3 |
| 15. Rude or inconsiderate behaviour (e.g., leaving light on, sex act while roommate is present, "standing up" date/friend, locking out roommate) | 64 | 16.4 | 23 | 10.6 |
| 16. Negligence (losing the possessions of another, not intentional but person should have known better) | 7 | 1.8 | 3 | 1.4 |
| 17. Policy rules (institution related problems such as perceived unfair workload, grades, classroom/residence regulations) | 0 | 0.0 | 2 | 0.9 |
| 18. Ending friendship/relationship | 4 | 1.0 | 2 | 0.9 |
| 19. Peer pressure | 3 | 0.8 | 1 | 0.5 |
| 20. Social exclusion | 4 | 1.0 | 2 | 0.9 |
| 21. Being possessive | 2 | 0.5 | 1 | 0.5 |
| 22. Invading personal space | 1 | 0.3 | 1 | 0.5 |
| Unintentional Behaviors | | | | |
| 23. Accidental | 18 | 4.6 | 10 | 4.6 |
| 24. Motive other than harm or provocation (parents lecturing) | 10 | 2.6 | 4 | 1.9 |

Towards the Big Picture: Drinking, Depression, Conflicts and Academic Satisfaction, Motivation, and Achievement in the First Year of University

Alcohol and Depression

When we planned this study, we hypothesized that people who drink heavily may develop depressive symptoms due to potential long-term physiological effects of alcohol. Previous research has also shown that people who are depressed sometimes “self-medicate” with alcohol. In the Keeping Track study, the fact that we assessed alcohol consumption and depressive symptoms repeatedly (i.e., over 26 consecutive weeks in Phase 2) will make it easier to determine which explanation is more reasonable assuming that a link exists at all.

A preliminary analysis of the Phase 2 weekly data, based on participants average number of drinks and average depression score across the 26 weeks of Phase 2, suggests that people who drink heavily do not necessarily have more depressive symptoms than those who drink little or not at all ($r = -.04, ns$). These results were a bit surprising to us at first. This lack of association could be due to the fact that alcohol and depression are truly unrelated in a young adult population. Perhaps an association exists only in an older adult population as a result of less resilience to the effects of alcohol. A number of factors may also mask an association between alcohol and depression. The first involves what we call the *social life spurious factor*. Students who drink tend to do so on weekends with friends, and this activity could be seen as an index of additional social support that contributes to their well-being. In fact, alcohol consumption was slightly associated with enjoying university ($r = .18, p < .001$). (We note, however, that students who drank the most worked less on their studies ($r = -.13, p < .01$), and did slightly less well academically ($r = -.10, p < .05$). A second factor is the *individual intervention mechanism*. Some people who are depressed may cut down on their drinking thus also masking the heavy-drinking-depression association.

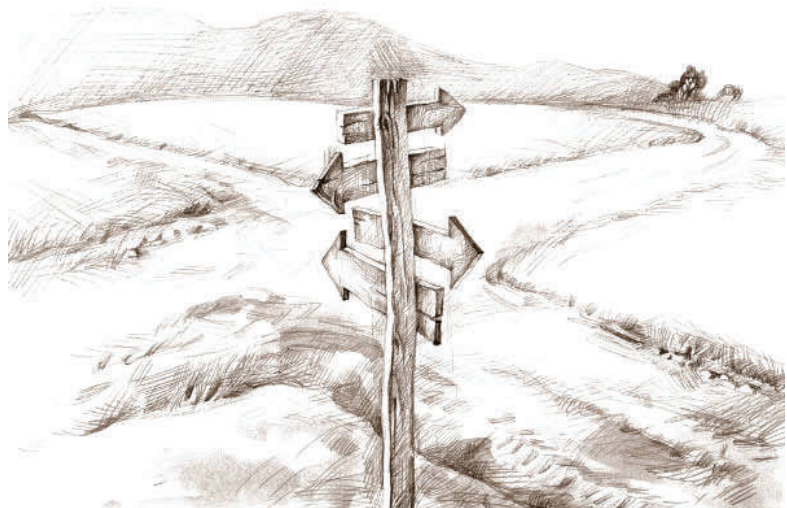
We still need to do more in-depth analyses focusing on the individual (non-averaged) weeks and determining if associations differ for men and women before making any specific recommendations.

Depressive Symptoms and Other Variables

Students who reported the most symptoms of depression (averaged across the first year as in the previous section) had a slightly lower first year academic achievement ($r = -.21, p < .001$). During each assessment, we asked students to estimate their overall final average. This measure had a similar association with depressive symptoms ($r = -.26, p < .001$). We will investigate this association further by determining whether depressive symptoms in a given week predict final average estimates in a subsequent week and/or whether the opposite relation exists.

Symptoms of depression were associated with feeling more stressed about studies ($r = .30, p < .001$), not feeling that one is not doing well academically ($r = -.46, p < .001$), feeling less pleased about academic performance ($r = -.44$), and lower enjoyment of university ($r = -.43, p < .001$).

One of the measures in the Baseline assessment of September 2006, was the Aggression Questionnaire. This measure assesses four aspects of aggressive dispositions, namely: physical aggression, verbal aggression, anger and hostility. We investigated the associations between these



Symptoms of depression were also slightly associated with the level of harm experienced from the reported conflicts ($r = .22, p < .001$). There are a number of explanations for this association. For example it is possible that people who experience harm from interpersonal conflicts also experience depressive symptoms as a result.

Symptoms of depression were negatively related to the level of effort that students applied to their studies ($r = -.23, p < .001$). One possible explanation is that students who are depressed have less energy to devote to their work. One of the symptoms of depression is hopelessness, and students who have little hope in doing well probably apply less effort to their studies than do students who expect to do well.

indices of aggressive dispositions and the average depression score during Phase 2. Participants who had high aggressive disposition scores were more likely to have slightly higher depressive symptoms scores in terms of verbal aggression ($r = .14, p < .001$), anger ($r = .21, p < .001$) and hostility ($r = .34, p < .001$) than those with lower aggressive dispositions scores.



Some of Our Work So Far

- Tremblay, P. F., & Dozois D. J. A. (2009). Another perspective on trait aggressiveness: Overlap with early maladaptive schemas. *Personality and Individual Differences*, 46, 569-574.
- Tremblay, P. F., Graham, K., Wells, S., Harris, R., Pulford, R., & Roberts, S. E. When do college students drink most during the first academic year? An internet based study of daily and weekly drinking. Submitted to *Journal of American College Health*.
- Tremblay, P. F. (Nov 2007). *Online longitudinal study of university student drinking patterns, depression, and conflict*. Part of a symposium titled "Student drinking, aggression, and depression: Current research and implications" organized by the Office of the Vice Provost (Academic Programs & Students) University of Western Ontario, London Ontario.
- Tremblay, P. F. (June 2007). *Online longitudinal study of university student drinking patterns, depression and conflict: methodology and preliminary results*. Addiction Rounds. Centre for Addiction and Mental Health, Toronto.
- Tremblay, P. F., & Dozois, D. J. A. (accepted). *Investigating the underlying dimensions of trait aggressiveness from the perspective of cognitive models of psychopathology*. Symposium paper submitted for the Canadian Psychological Association's 70th Annual Convention, Montréal, Québec, June 11-13, 2009.
- Tremblay, P. F., Roberts, S. E., Wells, S., Graham, K., Harris, R., & Pulford, R. (accepted). *A Comprehensive assessment of interpersonal conflicts among university students*. Poster submitted for the Canadian Psychological Association's 70th Annual Convention, Montréal, Québec, June 11-13, 2009.
- Tremblay, P. F., Dozois, J. D. A., Graham, K., Wells, S., & Pulford, R. (accepted). *A longitudinal study of university students' BDI-II depressive symptoms*. Poster submitted for the American Psychological Association 117th Annual Convention, Toronto, Ontario, August 6-9, 2009.
- Tremblay, P. F., Wells, S., Graham K., Harris, R., Pulford, R., & Roberts S. E. (June 2008). *When do university students drink most? Results from the first two years of a diary-longitudinal study in a Canadian sample*. Paper presented at the 34th Annual Epidemiology Symposium of the Kettil Bruun Society for Social and Epidemiological Research on Alcohol, Victoria, Canada.
- Tremblay, P. F., Wells, S., Graham, K., Gardner, R. C., Harris, R., & Dozois, D. (June 2007). *Alcohol consumption trajectories in a weekly diary study with first year university students*. Poster presented at the Canadian Psychological Association Annual Convention, Ottawa.

Other Acknowledgments

We express our sincere appreciation to:

- Bob Gough, Assistant Director of Residence Education and Programs at Western, for his assistance with the recruitment of participants
- Glen Tigert, Ken Vanderwal, and Lee Ann Wilson of the Office of the Registrar at Western for their assistance with the email recruitment procedure
- Krysztof Chelchowski, and Tracy Ishmael of the Office of the Registrar at Western for preparing the database of student grades
- The Finance Department at the Centre for Addiction and Mental Health (CAMH) for the preparation of research participants' cheques
- Sue Steinback at CAMH (London office) for her assistance with the preparation of the postage mail to students
- Sandy Tamowski at CAMH (London office) for her assistance in coordinating various administrative aspects of the project
- Jennifer Jelley, M.A., Ljiljana Mihic, Ph.D., Sarah Brennek, B.A, Sharon Roberts, Ph.D., for their assistance during various stages of this project



Stay in touch with us to view various updates of the research results of the Keeping Track Study at

<http://publish.uwo.ca/~ptrembla>

Forward any comments or questions about the study or this newsletter to Roseanne Pulford (rpulford@uwo.ca) or to Dr. Paul Tremblay (ptrembla@uwo.ca)